

Remarks/Arguments

I. Status of the Claims

In the Office Action, the Examiner indicated that claims 1-15 are pending and rejected claims 1-15 under 35 U.S.C. §§102(b), 102(e) and/or 103(a).

Claim 1 is canceled in this Amendment. Newly independent claims 2 and 7 are amended herein to more clearly set forth the invention and to incorporate the subject matter of canceled claim 1. Claim 11 is also amended herein to depend from claim 2, rather than canceled claim 1.

Claims 16-32 were previously canceled in light of a restriction requirement.

Claims 33 and 34 are added in this Amendment to incorporate features from Examples 1 and 2, respectively, in independent claim format. These claims recite a specific substrate type, a specific etching agent, and a preferred range of pH values for the particular combination of substrate type and etching agent. Claim 33 specifically recites a silicate-based glass disk substrate, a Ce metal etchant, and a pH of approximately 1.0 to 2.0. Claim 34 specifically recites a Sendust head wafer substrate, a Fe metal etchant, and a pH of approximately 9.5 to 10.

Claims 2-15, 33 and 34 are pending for reconsideration.

II. Rejection of Claims 1 and 11 under 35 U.S.C. §102(b) as being Anticipated by Vines et al. (U.S. Patent No. 6,048,789)

At page 2, item 2 of the Office Action, claims 1 and 11 are rejected under 35 U.S.C. §102(b) as being anticipated by Vines et al. (U.S. Patent No. 6,048,789).

This rejection is respectfully traversed to the extent that it is maintained. A proper rejection under 35 U.S.C. §102 requires that the reference disclose each and every claim element as set forth in the claims. As discussed below, however, the Vines et al. patent fails to disclose (or even suggest) the invention as now claimed.

Independent claim 1 is canceled in this Amendment. The subject matter of canceled claim 1 is incorporated into newly independent claims 2 and 7, as well as new independent claims 33 and 34. The Vines et al. patent fails to disclose (or even suggest) the invention as now claimed. Independent claim 2 requires a cleaning polish etch (CPE) composition for treating a previously superfinished surface of a substrate selected from a group consisting of a glass disk substrate, a ceramic disk substrate, and a glass-ceramic disk substrate for use in a data storage device. Independent claim 7 requires a CPE composition for treating a previously superfinished surface of a head wafer selected from a group consisting of Sendust and Permalloy. Independent claim 33 requires a CPE composition for treating a previously superfinished surface of a silicate-based glass disk substrate for use in a data storage device. Independent claim 34 requires a CPE composition for treating a previously superfinished surface of a Sendust head wafer substrate. The Vines et al. patent fails to disclose (or even suggest) using its IC interconnect formulation for treating a previously superfinished surface of a disk substrate as required by independent claims 2 and 33, or for treating a previously superfinished surface of a head wafer as required by independent claims 7 and 34. Instead, the

Vines et al. patent describes using its IC interconnect formulation in the manufacture of integrated circuits.

Claim 11 depends directly from independent claim 2, and sets forth all of the limitations therein. For at least the reasons discussed above with respect to independent claim 2, the Applicants respectfully submit that dependent claim 11 also patentably defines over the prior art.

Therefore, the Applicants respectfully request reconsideration and withdrawal of this rejection under §102(b).

III. Rejection of Claims 1 and 11 under 35 U.S.C. §102(b) as being Anticipated by Carpio (U.S. Patent No. 5,840,629)

At page 2, item 3 of the Office Action, claims 1 and 11 are rejected under 35 U.S.C. §102(b) as being anticipated by Carpio (U.S. Patent No. 5,840,629).

This rejection is respectfully traversed to the extent that it is maintained. A proper rejection under 35 U.S.C. §102 requires that the reference disclose each and every claim element as set forth in the claims. As discussed below, however, the Carpio patent fails to disclose (or even suggest) the invention as now claimed.

Independent claim 1 is canceled in this Amendment. The subject matter of canceled claim 1 is incorporated into newly independent claims 2 and 7, as well as new independent claims 33 and 34. The Carpio patent fails to disclose (or even suggest) the invention as now claimed. Independent claim 2 requires a cleaning polish etch (CPE) composition for treating a previously superfinished surface of a substrate selected from a

group consisting of a glass disk substrate, a ceramic disk substrate, and a glass-ceramic disk substrate for use in a data storage device. Independent claim 7 requires a CPE composition for treating a previously superfinished surface of a head wafer selected from a group consisting of Sendust and Permalloy. Independent claim 33 requires a CPE composition for treating a previously superfinished surface of a silicate-based glass disk substrate for use in a data storage device. Independent claim 34 requires a CPE composition for treating a previously superfinished surface of a Sendust head wafer substrate. The Carpio patent fails to disclose (or even suggest) using its copper chemical mechanical polishing (CMP) slurry for treating a previously superfinished surface of a disk substrate as required by independent claims 2 and 33, or for treating a previously superfinished surface of a head wafer as required by independent claims 7 and 34. Instead, the Carpio patent describes using its copper CMP slurry in the processing of semiconductors.

Moreover, independent claims 2, 7, 33 and 34 specifically recite that the cleaning polish etch (CPE) composition is not a slurry -- further distinguishing over the copper CMP slurry described in the Carpio patent.

Claim 11 depends directly from independent claim 2, and sets forth all of the limitations therein. For at least the reasons discussed above with respect to independent claim 2, the Applicants respectfully submit that dependent claim 11 also patentably defines over the prior art.

Therefore, the Applicants respectfully request reconsideration and withdrawal of this rejection under §102(b).

IV. Rejection of Claims 1-3, 7-8, 11-12 and 14-15 under 35 U.S.C. §102(e) as being Anticipated by Small et al. (U.S. Patent No. 6,251,150)

At page 3, item 4 of the Office Action, claims 1-3, 7-8, 11-12 and 14-15 are rejected under 35 U.S.C. §102(e) as being anticipated by Small et al. (U.S. Patent No. 6,251,150) as evidenced by Sugaya et al. (U.S. Patent No. 3,986,210).

This rejection is respectfully traversed to the extent that it is maintained. A proper rejection under 35 U.S.C. §102 requires that the reference disclose each and every claim element as set forth in the claims. As discussed below, however, the Sugaya et al. patent fails to disclose (or even suggest) the invention as now claimed.

Independent claim 1 is canceled in this Amendment. The subject matter of canceled claim 1 is incorporated into newly independent claims 2 and 7, as well as new independent claims 33 and 34. The Small et al. patent fails to disclose (or even suggest) the invention as now claimed. Independent claim 2 requires a cleaning polish etch (CPE) composition for treating a previously superfinished surface of a substrate selected from a group consisting of a glass disk substrate, a ceramic disk substrate, and a glass-ceramic disk substrate for use in a data storage device. Independent claim 7 requires a CPE composition for treating a previously superfinished surface of a head wafer selected from a group consisting of Sendust and Permalloy. Independent claim 33 requires a CPE composition for treating a previously superfinished surface of a silicate-based glass disk substrate for use in a data storage device. Independent claim 34 requires a CPE composition for treating a previously superfinished surface of a Sendust head wafer substrate. The Small et al. patent fails to disclose (or even suggest) using its slurry composition for treating a previously superfinished surface of a disk substrate as required by independent claims 2 and 33, or for treating a previously superfinished surface of a head wafer as required by independent claims 7 and 34. Instead, the Small et al. patent

describes using its slurry composition for chemical mechanical polishing (CMP) of a substrate. The Sugaya et al. patent fails to cure this deficiency in the Small et al. patent.

Moreover, independent claims 2, 7, 33 and 34 specifically recite that the cleaning polish etch (CPE) composition is not a slurry -- further distinguishing over the slurry composition described in the Small et al. patent. The slurry composition described in the Small et al. patent contains spinel particles. There are no slurry particles in the CPE composition of the present invention -- indeed, the CPE composition of the present invention is used for removing slurry particles which adhere to the surfaces of the substrates that are superfinished using a slurry. Again, the Sugaya et al. patent fails to cure this deficiency in the Small et al. patent.

Claims 3, 11 and 12 depend, directly or indirectly, from independent claim 2, and sets forth all of the limitations therein. For at least the reasons discussed above with respect to independent claim 2, the Applicants respectfully submit that dependent claims 3, 11 and 12 also patentably define over the prior art.

Claims 8, 14 and 15 depend, directly or indirectly, from independent claim 7, and sets forth all of the limitations therein. For at least the reasons discussed above with respect to independent claim 7, the Applicants respectfully submit that dependent claims 8, 14 and 15 also patentably define over the prior art.

Therefore, the Applicants respectfully request reconsideration and withdrawal of this rejection under §102(e).

V. Rejection of Claims 1-12 and 14 under 35 U.S.C. §102(e) as being Anticipated by Piltingsrud (U.S. Patent No. 6,402,851)

At pages 3-4, item 5 of the Office Action, claims 1-12 and 14 are rejected under 35 U.S.C. §102(e) as being anticipated by Piltingsrud (U.S. Patent No. 6,402,851).

This rejection is respectfully traversed to the extent that it is maintained. A proper rejection under 35 U.S.C. §102 requires that the reference disclose each and every claim element as set forth in the claims. As discussed below, however, the Piltingsrud patent fails to disclose (or even suggest) the invention as now claimed.

Independent claim 1 is canceled in this Amendment. The subject matter of canceled claim 1 is incorporated into newly independent claims 2 and 7, as well as new independent claims 33 and 34. The Piltingsrud patent fails to disclose (or even suggest) the invention as now claimed. Each of the independent claims, i.e., claims 2, 7, 33 and 34, requires a cleaning polish etch (CPE) composition for treating a previously superfinished surface of a substrate by mechanically rubbing the previously superfinished surface of the substrate with a pad while contacting the previously superfinished surface of the substrate with the CPE composition. The Piltingsrud patent fails to disclose (or even suggest) such a CPE composition but instead describes an acid bath immersion composition.

Moreover, independent claim 7 requires a cleaning polish etch (CPE) composition for treating a previously superfinished surface of a head wafer selected from a group consisting of Sendust and Permalloy. Independent claim 34 requires a CPE composition for treating a previously superfinished surface of a Sendust head wafer substrate. The Piltingsrud patent fails to disclose (or even suggest) using its acid bath immersion composition for treating a previously superfinished surface of a head wafer as required by

independent claims 7 and 34. Instead, the Piltingsrud patent describes using it acid bath immersion composition in the manufacture of glass substrates used in disk drive data storage devices.

Claims 3-6, 11 and 12 depend, directly or indirectly, from independent claim 2, and sets forth all of the limitations therein. For at least the reasons discussed above with respect to independent claim 2, the Applicants respectfully submit that dependent claims 3-6, 11 and 12 also patentably define over the prior art.

Claims 8-10 and 14 depend, directly or indirectly, from independent claim 7, and sets forth all of the limitations therein. For at least the reasons discussed above with respect to independent claim 7, the Applicants respectfully submit that dependent claims 8-10 and 14 also patentably define over the prior art.

Therefore, the Applicants respectfully request reconsideration and withdrawal of this rejection under §102(e).

VI. Rejection of Claim 13 under 35 U.S.C. §103(a) as being Unpatentable over Small et al. (U.S. Patent No. 6,251,150) in View of Applicant's Admitted Prior Art

At pages 4-5, item 8 of the Office Action, claim 13 is rejected under 35 U.S.C. §103(a) as being unpatentable over Small et al. (U.S. Patent No. 6,251,150) as evidenced by Sugaya et al. (U.S. Patent No. 3,986,210) in view of Applicant's admitted prior art.

This rejection is respectfully traversed to the extent that it is maintained. As discussed below, the Small et al. patent, the Sugaya et al. patent and Applicant's admitted

prior art, alone and combination, fail to disclose or suggest the invention as now set forth in the claims.

Claim 13 depends indirectly from independent claim 2, and set forth all of the limitations therein. Independent claim 2 (from which claim 13 depends indirectly) is amended herein to more clearly set forth the invention. For example, independent claim 2 now sets forth a cleaning polish etch (CPE) composition for treating a previously superfinished surface of a substrate selected from a group consisting of a glass disk substrate, a ceramic disk substrate, and a glass-ceramic disk substrate for use in a data storage device. The Small et al. patent fails to disclose or suggest using its slurry composition for treating a previously superfinished surface of a disk substrate as required by independent claim 2. Instead, the Small et al. patent describes using its slurry composition for chemical mechanical polishing (CMP) of a substrate. The Sugaya et al. patent and Applicant's admitted prior art fail to cure this deficiency in the Small et al. patent. Moreover, independent claim 2 specifically recites that the cleaning polish etch (CPE) composition is not a slurry -- further distinguishing over the slurry composition described in the Small et al. patent. The slurry composition described in the Small et al. patent contains spinel particles. There are no slurry particles in the CPE composition of the present invention -- indeed, the CPE composition of the present invention is used for removing slurry particles which adhere to the surfaces of the substrates that are superfinished using a slurry. Again, the Sugaya et al. patent and Applicant's admitted prior art fail to cure this deficiency in the Small et al. patent. For at least the reasons discussed above with respect to independent claim 2, the Applicants respectfully submit that dependent claim 13 also patentably defines over the prior art.

Therefore, the Applicants respectfully request reconsideration and withdrawal of this rejection of claim 13 under §103(a).

VII. Conclusion

In view of the foregoing comments and amendments, the Applicants respectfully submit that all of the pending claims (i.e., claims 2-15, 33 and 34) are in condition for allowance and that the application should be passed to issue.

If a conference would be of value in expediting the prosecution of this application, the Examiner is hereby invited to telephone the undersigned counsel at (540) 785-6578 to arrange for such a conference.

Respectfully submitted,

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